

HANDBOOK OF PHONOLOGICAL DATA
FROM A SAMPLE OF THE WORLD'S LANGUAGES

A Report of the Stanford Phonology Archive

Compiled and edited by

John H. Crothers
James P. Lorentz
Donald A. Sherman
Marilyn M. Vihman

	055 Moroccan Arabic	055 Moroccan Arabic	055 Moroccan Arabic
055	01 p ³⁰ 60 (loan, free) */b/	25 f-long [f-long-pharyngealized] ⁶¹	49 m *[m-pharyngealized]
055	02 b *[p] *[b-pharyngealized]	26 f-long-labialized (limited) [f-long-labialized-pharyngeal ized] (free)	50 m-long *[m-long-pharyngealized]
055	03 b-long *[b-long-pharyngealized]	27 v ³⁰ (loan)	51 m-pharyngealized ³¹ 61 (limited, allo) */m/
055	04 b-pharyngealized ³¹ 61 (limited, allo) */b/	28 s-dental ⁰¹	52 m-long-pharyngealized ³¹ 61 (limited, allo) */m-long/
055	05 b-long-pharyngealized ³¹ 61 (limited, allo) */b-long/	29 s-dental-long ⁰¹	53 m-long-labialized (limited) [m-long-labialized-pharyngeal ized] (free)
055	06 b-long-labialized (limited) [b-long-labialized-pharyngeal ized] (free)	30 s-pharyngealized ⁰³	54 n ⁰⁶ [n-pharyngealized] ⁶¹
055	07 t-dental ⁰¹ [t/s-dental] ⁰² (free)	31 s-long-pharyngealized ⁰³	55 n-long ⁰⁶ [n-long-pharyngealized] ⁶¹
055	08 t-dental-long	32 z-dental ⁰¹ *[z-pharyngealized]	56 l-dental ⁰¹ 07 *[l-pharyngealized]
055	09 t-pharyngealized ⁰³	33 z-pharyngealized ⁰³ 31 61 (limited, allo) */z-dental/	57 l-dental-long ⁰¹ 07 *[l-long-pharyngealized]
055	10 t-long-pharyngealized ⁰³	34 s-hacek ⁰⁴ [s-hacek-pharyngealized] ⁶¹	58 l-pharyngealized ⁰³ 07 31 (limited, allo) */l-dental/
055	11 d-dental ⁰¹	35 s-hacek-long ⁰⁴ [s-hacek-long-pharyngealized] ⁶¹	59 l-long-pharyngealized ⁰³ 07 31 61 (limited, allo) */l-dental-long/
055	12 d-dental-long	36 z-hacek ⁰⁴ [z-hacek-pharyngealized] ⁶¹	60 r-flap
055	13 d-pharyngealized ⁰³	37 z-hacek-long ⁰⁴ [z-hacek-long-pharyngealized] ⁶¹	61 r-trill-long
055	14 d-long-pharyngealized ⁰³	38 x-uvular [x-uvular-pharyngealized] ⁶¹	62 r-flap-pharyngealized
055	15 k [k-pharyngealized] ⁶¹	39 x-uvular-long [x-uvular-long-pharyngealized] ⁶¹	63 r-trill-long-pharyngealized
055	16 k-long [k-long-pharyngealized] ⁶¹	40 x-uvular-labialized (limited)	64 glottal stop
055	17 k-labialized (limited)	41 gamma-uvular [gamma-uvular-pharyngealized] ⁶¹	65 glottal stop-long
055	18 g [g-pharyngealized] ⁶¹	42 gamma-uvular-long [gamma-uvular-long-pharyngeal ized] ⁶¹	66 h
055	19 g-long [g-long-pharyngealized] ⁶¹	43 gamma-uvular-labialized (limited)	67 h-long
055	20 g-labialized (limited)	44 pharyngeal-voiceless ⁰⁵	68 k-long-labialized (limited)
055	21 q [q-pharyngealized] ⁶¹	45 pharyngeal-voiceless-long ⁰⁵	69 z-dental-long ⁰¹ *[z-long-pharyngealized]
055	22 q-long [q-long-pharyngealized] ⁶¹	46 pharyngeal-voiceless-labializ ed (limited)	70 z-long-pharyngealized ⁰³ 31 61 (allo, limited) */z-dental-long/
055	23 q-labialized (limited)	47 pharyngeal-voice ⁰⁵	
055	24 f [f-pharyngealized] ⁶¹	48 pharyngeal-voice-long ⁰⁵	51 i [e] ⁶²

	055 Moroccan Arabic	055 Moroccan Arabic	055 Moroccan Arabic
	[iota] 62 [iota-over-short] 09 62	53 schwa-over-short 32 (transitional) *[ash-over-short] *[alpha-unrounded-over-short] [schwa-voiceless-over-short] 63 [e-over-short] (free)	[upsilon] 62 [upsilon-over-short] 62 55 yod 10 33 56 yod-long 11 33 57 w 10 33 58 w-long 11 33
055	52 ash [alpha-unrounded] 08 62 [ash-over-short] 09 62 64 (allo, free) */schwa-over-short/ [alpha-unrounded-over-short] 09 62 64 (allo, free) */schwa-over-short/	54 u [o] 62	
055	\$a Moroccan Arabic \$d Semitic \$e Morocco \$f 17 million \$g Merritt Ruhlen \$h Marilyn Vihman (review) \$i John Crothers (editor)		
055	\$a Harrell, Richard S. \$b 1962 \$c A Short Reference Grammar of Moroccan Arabic \$f Georgetown Arabic Series, No. 1. \$g Washington, D.C.: Georgetown University Press		
055	\$a Abdel-Massih, Ernest T. \$b 1973 \$c An Introduction to Moroccan Arabic \$g Ann Arbor: Center for Near Eastern and North African Studies, University of Michigan \$q informants		
055	\$a Harrell, Richard S. \$b 1965 \$c A Basic Course in Moroccan Arabic \$f Georgetown Arabic Series, No. 8 \$g Washington, D.C.: Georgetown University Press		
055	\$a LABIALIZED CONSONANTS \$A Both Harrell and Abdel-Massih recognize a set of labialized labial and velar (also uvular) consonants. Abdel-Massih also adds a labialized pharyngeal. Harrell says that the labialized labials are always long and optionally pharyngealized. Both say that they [the labials] have alternate pronunciations as clusters with /w/, and Abdel-Massih also gives an alternate pronunciation as /C.u/. As for the velars, etc. both authors agree that they are short and occur only as the first member of initial consonant clusters; but Harrell says that many speakers have plain consonants in these clusters, and that "there are only a very few words where these initial labialized consonants are not interchangeable with the corresponding plain consonants," and he ignores labialization in his transcription. Harrell also adds a /k-long-labialized/ which may occur medially before /ash/ in free variation with /k-long/. Both authors also agree that all the labialized consonants have alternate pronunciations as clusters /C.w/. In any case the role of labialization seems to be quite restricted. Certain points are unclear in the sources. The phonetic difference between labialized consonant and /C.w/ is not stated; this may have something to do with the position of epenthetic vowels in consonant clusters, which is not fully explained. Also it would seem to be possible to analyze all the labialized C as /C.w/, particularly given their optional realization in that form; the sources do not say why they do not do this. [JHC]		
055	\$a LONG CONSONANTS \$A "Tenseness is a very important feature of Moroccan Arabic. A tense (also fortis) consonant in general is produced with more force than its lax (also lenis) counterpart. Tense or fortis here refers to two identical consonants, with no intervening vowel, pronounced with stronger articulation and greater tension on the muscles of the articulator and, usually, aspiration. Lax or lenis refers to a single consonant pronounced with lesser muscular tension in the speech organ and weaker, laxer articulation and, usually, no aspiration. A tense consonant has precisely twice the duration of a single consonant." (Abdel-Massih, p.9)		
055	\$a PHARYNGEALIZED CONSONANTS \$A "Emphatic consonants...are lower in pitch than their non-emphatic counterparts. They are pronounced with greater muscular tension in the mouth and throat and with a raising of the back and root of the tongue toward the roof of the mouth.... The emphatics /t-pharyngealized, d-pharyngealized, s-pharyngealized/ are quite common, with or without other emphatic consonants in the words in which they occur. /r-flap-pharyngealized/ also occurs widely in words without the presence of any other emphatic consonants, but it is limited to the neighborhood of the vowels /i/ and /ash/ unless /t-pharyngealized, d-pharyngealized, s-pharyngealized/ also occurs in the word. The occurrence of /b-pharyngealized, m-pharyngealized, z-pharyngealized, l-pharyngealized/ in words where no /t-pharyngealized, d-pharyngealized, s-pharyngealized, r-flap-pharyngealized/ occurs is quite rare. Contrariwise, there is no occurrence of a plain /b/ or /m/ in a word in which one of the other emphatics occurs." (p.8)		
055	\$a PHARYNGEALIZATION PROSODY \$A "/t-pharyngealized, d-pharyngealized, s-pharyngealized, z-pharyngealized, l-pharyngealized, r-flap-pharyngealized/ are the 'primary emphatics.' The occurrence of a primary emphatic consonant will cause a plain consonant in the same syllable (sometimes in the preceding and/or the following syllable) to become emphatic. This set of changed consonants will be referred to as the 'secondary emphatics.' The domain of the spread		

- of emphasis is the syllable, which means that a syllable has all or none of its sounds emphatic. This also means that in Moroccan Arabic all of the consonants occur as both emphatic and plain because of the influence of emphatic consonants on plain consonants.... The influence of emphatic consonants on vowels is very noticeable to a non-native speaker. This is particularly clear with the vowel /ash/, when in the environment of an emphatic consonant." (Abdel-Massih, p.5)
- 055 \$A STRESS \$A "Stress is terminal if the last syllable of the word has the structure CVC or C.schwa.CC.... Stress is penultimate if the last syllable of the word has the structure CV or if it ends in /schwa.C/.... Stress shifts with the suffixation of pronominal suffixes." (p.29)
- 055 \$A SYLLABLE \$A (C)CV(C)(C) \$A "In Moroccan Arabic, words or utterances never begin with a vowel. In all cases where a non-native speaker hears what he thinks is an initial vowel, it is always /glottal stop.V/. (p.13) However Abdel-Massih does not write [glottal stop] before word initial epenthetic [schwa-over-short]. The syllable canon given here is based on examples, counting [schwa-over-short] as a vowel.
- 055 01 \$A In producing the apical obstruents "the tip of the tongue touches or approaches the back surface of the upper front teeth." (p.4)
- 055 02 \$A "Some Moroccans pronounce the /t-dental/ with a noisy release which sounds similar to /s-dental/, so that the consonant sounds similar to the consonant cluster /t-dental.s-dental/, but even for such speakers /t-dental/ and /t-dental.s-dental/ are not pronounced exactly alike." (p.4)
- 055 03 \$A There is a labial component in pharyngealization of apicals: "lip muscles somewhat extended forward." (Abdel-Massih, p.20)
- 055 04 \$A Abdel-Massih (1973, p.4) describes /s-hacek/ and /z-hacek/ as palatoalveolar.
- 055 05 \$A In producing the pharyngeals, the larynx is raised and the tongue root retracted. (p.6)
- 055 06 \$A Harrell (1962, p.7) describes /n/ as dental, while Abdel-Massih (1973, p.4) indicates it is alveolar.
- 055 07 \$A /l-dental/ is "clear," while /l-pharyngealized/ is "dark." (p.7)
- 055 08 \$A [alpha-unrounded] is produced "a little farther back than the 'a' of English 'father.'" (Abdel-Massih, p.24)
- 055 09 \$A All the "over-short" vowel allophones (except [upsilon-over-short]) are described as "centralized." (Abdel-Massih, p.23-27)
- 055 10 \$A "The Moroccan /w/ and /yod/ are similar to English 'w' and 'y' when they are initial, although they are more softly articulated." (p.8)
- 055 11 \$A "After vowels, Moroccan /w/ and /yod/, especially when double, are likely to strike the English ear as being similar to the vowels of 'who' and 'he' respectively." (p.8)
- 055 30 \$A /p/ and /v/ occur "in a few words borrowed from French." (Abdel-Massih 1973, p.4)
- 055 31 \$A Regarding the limited independent status of /b-pharyngealized/, /m-pharyngealized/, /z-pharyngealized/, and /l-pharyngealized/, see 0010602.
- 055 32 \$A "Moroccan Arabic has a non-phonemic (with no semantic significance) phonetic 'schwa' or short vowel. This occurs as a transition between consonants or consonant clusters." (Abdel-Massih, p.27)
- 055 33 \$A "The only place where /yod/ is consistently distinguished from /yod-long/, and /w/ from /w-long/ is when they are preceded by [e] after a pharyngeal fricative." (p.16)
- 055 60 \$A /b/ is sometimes voiceless before a voiceless stop or fricative. (Abdel-Massih, p.4)
- 055 61 \$A A plain consonant becomes pharyngealized when in the same syllable as a "primary emphatic" (/t-pharyngealized/, etc.) This may sometimes extend to the preceding or following syllable. (Abdel-Massih, p.5)
- 055 62 \$A /i, ash, u/ are realized as [e, alpha-unrounded, o] when non-final in the environment of emphatics; they are realized as [iota, ash-over-short, upsilon] when word final and not preceded by an emphatic; and they are realized as [iota-over-short, alpha-unrounded-over-short, upsilon-over-short] when final and preceded by an emphatic. (Abdel-Massih, p.23-26)
- 055 63 \$A /schwa-over-short/ is voiceless in the environment of voiceless consonants. (Abdel-Massih, p.27)
- 055 64 \$A /schwa-over-short/ is realized as [ash-over-short] or [alpha-unrounded-over-short] in the

environment of the pharyngeal fricatives. (Abdel-Massih, p.27)